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Sedentary behavior and sleep problems among 42,489 community-dwelling adults in six low- and middle-income countries

Running title: Sleep and sedentary behavior

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Author contributorship

DV, BS and AK designed the study. AK led the data analysis with support from DV. DV, BS, JF and AK wrote the manuscript. All authors provided critical comments on the manuscript and approved the final version.

SUMMARY (215/250)

There is a lack of multi-national research investigating the association between sleep problems and sedentary behavior. In this study, we investigated the relationship between the time spent sedentary during waking hours and sleep problems in six low- and middle-income countries. Cross-sectional, community-based data from the Study on Global Ageing and Adult Health survey were analyzed. Adjusted logistic regression analyses were undertaken to explore the relationship between self-reported sleep problems (such as difficulties falling asleep, waking up frequently during the night or waking up too early in the morning) in the last 30 days and self-reported sedentary time (categorized as <4, 4 to <8, 8 to <11, ≥11 hours/day). Among 42,489 individuals aged ≥18 years (mean age=43.8±14.4 years; 50.1% women), those who were sedentary for 8 to <11 hours/day (n=2,782) and ≥11 hours/day (n=674) had a 1.61 (95%CI=1.03-2.50) and 1.75 (95%CI=1.17-2.62) times higher odds for having sleep problems, respectively, compared with those being sedentary for less than four hours per day (n=24,637). The strongest associations were observed among those aged 50-64 years. The observed associations were independent of a wide range of sociodemographic factors, physical and mental health conditions and physical activity behavior. Considering the social and occupational costs of sleep problems, it is important that future longitudinal research should consider the directionality of the data.

Keywords: insomnia; sitting; depression; obesity, low- and middle-income countries

INTRODUCTION

Sleep problems are among the most commonly reported global public health issues (Singleton et al., 2003) with rates ranging from 6% to 30% depending on the definition adopted (Roth, 2007). Women and people older than 50 years are at the highest risk (Stranges et al., 2012). Sleep problems are a major public health concern because they are strongly associated with a wide range of chronic physical and mental health conditions as well as increased risk for premature mortality (Liu et al., 2017). Next to an individual burden, the societal costs associated with sleep problems due to reduced work or school productivity and increased work or school absenteeism, are high (van Mill et al., 2013, Bauducco et al., 2015). Given the aforementioned, it is important to identify modifiable factors associated with sleep problems, which can be targeted via public prevention programs (Freeman et al., 2017, Christensen et al., 2016).

A recent meta-analysis including 16 studies demonstrated that sedentary behavior, which refers to any waking behavior characterized by an energy expenditure ≤1.5 metabolic equivalents (METs) while in a sitting, reclining or lying posture (Tremblay et al., 2017), is associated with an increased risk of insomnia and sleep disturbance (Yang et al., 2017). However, studies were almost exclusively conducted in high-income countries.

Whilst recent advances in the literature have shone light on the association between sedentary behavior during the day and sleep disturbances, a number of biases and gaps exist in the literature. First, there is a lack of multinational studies exploring the association between sedentary behavior and sleep problems. The current focus on specific populations within specific countries may have limited utility from a public health perspective. Second, there is no data on this association from low- and middle-income countries (LMICs), despite the high prevalence and increasing rates of sleep problems (Stranges et al., 2012) and sedentary behavior (Vancampfort et al., 2017) in this part of the world. Exploring associations between sleep problems and sedentary behavior in LMICs is of relevance due to different occupational and socio-cultural structures, methods of transportation, and environmental factors (e.g., safety, climate) compared to high-income countries (Atkinson et al., 2016). Results of previous studies on sedentary behavior and sleep problems from high-income countries may also not be generalizable to LMICs as the underlying factors of sleep problems (e.g., more stressful and poor living conditions often involving noise pollution, light exposure, uncomfortable sleeping surfaces, lack

of temperature control, and occupational stress) may differ (Stamatakis et al., 2007, Grandner et al., 2010).

Given the current gaps within the literature, this study investigated the association between sedentary behavior and sleep problems using predominantly nationally representative, community-based data from six countries, which participated in the Study on Global Ageing and Adult Health (SAGE) survey.

METHODS

The survey

Data were analyzed from the SAGE survey, which is publically available through http://www.who.int/healthinfo/sage/en/. This survey was undertaken in China, Ghana, India, Mexico, Russia, and South Africa between 2007 and 2010. All these countries were LMICs at the time of the survey. Details of the survey methodology have been published elsewhere (Kowal et al., 2012). In brief, we used a multistage clustered sampling design method in order to obtain nationally representative samples. The sample consisted of adults aged ≥18 years with oversampling of those aged ≥50 years. Trained research assistants conducted face-to-face interviews using a standard questionnaire. Standard translation procedures were undertaken to ensure comparability between countries. The survey response rates were: China 93%; Ghana 81%; India 68%; Mexico 53%; Russia 83%; and South Africa 75%. Sampling weights were constructed to adjust for the population structure as reported by the United Nations Statistical Division at https://unstats.un.org/unsd/databases.htm. Ethical approval was obtained from the Ethical Review Committee of the World Health Organization (WHO) and local ethics research review boards. Written informed consent was obtained from all participants.

Sleep problems (Outcome)

Sleep problems were assessed by the question "Overall in the last 30 days, how much of a problem did you have with sleeping, such as falling asleep, waking up frequently during the night or waking up too early in the morning?" with answer options none, mild, moderate, severe, and extreme. Those who answered severe and extreme were considered to have sleep problems. This definition has been used in previous publications using the same survey question on sleep problems (Koyanagi et al., 2014, Koyanagi and Stickley, 2015). Lethargy was assessed by the following question "Overall in the last 30 days, how much of a problem did you have due to not feeling rested and refreshed during the day (for example, feeling tired, not having energy)?" Sleep duration and sleep quality were assessed by the following questions: "How many hours did you sleep last night?" and "Please rate the quality of your sleep last night. Was it very good, good, moderate, poor or very poor?"

Sedentary behavior (Exposure)

In order to assess SB, participants were asked to state the total time they usually spent (expressed in minutes per day) sitting or reclining including at work, at home, getting to and from places, or with friends (e.g., sitting at a desk, sitting with friends, travelling in car, bus, train, reading, playing cards or watching television). This did not include time spent sleeping. The time spent sedentary was categorized into the recognized categories of <4, 4≤8, 8≤11, ≥11 hours/day (Ekelund et al., 2016).

Covariates

The selection of the control variables was based on past literature (Yang et al., 2017). These included age (years), gender, wealth quintiles based on country-specific income (poorest, poorer, middle, richer, richest), education (secondary completed or not), employment status (engaged in paid work ≥2 days in last 7 days: Yes/No), setting (urban/rural), obesity, number of chronic physical conditions, depression, and physical activity. Obesity was defined as body mass index (BMI) ≥30kg/m^2 (World Health Organization). The total number of seven chronic physical conditions (angina, arthritis, asthma, chronic lung disease, diabetes, hypertension, stroke) was summed per individual. Diabetes and stroke were solely based on lifetime self-reported diagnosis. Blood pressure was measured three times with a one-minute interval with the use of a wrist blood pressure monitor. Hypertension was defined as having at least one of: systolic blood pressure ≥140 mmHg; diastolic blood pressure ≥90 mmHg; or self-reported diagnosis. For angina, arthritis, asthma, and chronic lung disease, the participant was considered to have the condition in the presence of self-reported diagnosis and/or symptom-based diagnosis using algorithms. Specifically, the validated Rose questionnaire was used for angina (Rose, 1962), and other previously validated symptom-based algorithms were used for arthritis, asthma, and chronic lung disease (Arokiasamy et al., 2017, Moussavi et al., 2007). Questions based on the World Mental Health Survey version of the Composite International Diagnostic Interview (Kessler and Ustun, 2004) were used for the endorsement of past 12-month DSM-IV depression. The Global Physical Activity Questionnaire was used to assess the level of physical activity using conventional cut-offs and categorized as low, moderate, and high (http://www.who.int/chp/steps/GPAQ/en/).

Statistical analysis

Difference in sample characteristics between those with and without sleep problems was tested with Chi-squared test and Student's *t*-test for categorical and continuous variables, respectively. Multivariable logistic regression analyses were used to estimate the association between time spent sedentary (exposure) and sleep problems (outcome). Four models were constructed to assess the effect of the inclusion of different variables in the models: Model 1 - Adjusted for sociodemographic variables (age, sex, wealth, education, unemployment, setting, country); Model 2 -Adjusted for factors in Model 1 and obesity and number of chronic physical conditions; Model 3 - Adjusted for factors in Model 2 and depression; Model 4 - Adjusted for factors in Model 3 and physical activity. Age-stratified analyses (18-49, 50-64, ≥65 years) adjusting for all potential confounders (i.e., all variables in Model 4) were also conducted. We did not use finer categorization for those aged <50 years as the SAGE consisted of oversampling of those aged ≥50 years and the absolute number of individuals <50 years was small. Using the overall sample and adjusting for all potential confounders, we also conducted secondary analysis with lethargy, sleep quality, and duration of sleep as the outcome to assess the association between sedentary behavior and other aspects of sleep behavior (details are provided in **Appendix 1**). Furthermore, country-wise analyses were also done with sleep problems as the outcome to assess the between-country heterogeneity that may exist in the association between sedentary behavior and sleep problems. We dichotomized the variable on sedentary behavior as (≥8 and <8 hours/day) to obtain stable estimates with small sample size in each country. The estimates for each country were also combined into a random-effect meta-analysis with the Higgin's I^2 statistic being calculated. The Higgin's I^2 represents the degree of heterogeneity between countries that is not explained by sampling error with a value of <40% often considered as negligible (Higgins and Thompson 2002).

Adjustment for country was conducted by including dummy variables for each country as in previous SAGE publications (Stubbs et al., 2018b, Stubbs et al., 2018a). All variables were included in the models as categorical variables with the exception of number of chronic physical conditions and age (continuous variables). Under 2.2% of the values for all variables used in the analysis were missing with the exception of obesity (5.8%). Complete case analysis was done. All analyses were done with Stata statistical software version 14.1 (Stata Corp LP, College Station, Texas). The sample weighting and the complex study design were taken into account in all analyses with Taylor linearization methods.

Results from the logistic regression models are presented as ORs with 95% confidence intervals (95%CIs). The level of statistical significance was set at $p < 0.05$.

RESULTS

A total 42,489 individuals aged ≥18 years (China 14,813; Ghana 5,110; India 11,230; Mexico 2,756; Russia 4,355; South Africa 4,225) were included in the analysis. The mean age was 43.8 (14.4) years and 50.1% were women. The prevalence of sleep problems was 4.4%. Overall, 58.2% (n=24,637), 29.2% (n=13,477), 7.1% (n=2,782), and 1.2% (n=674) of the individuals engaged in <4, 4 to <8, 8 to <11, and ≥11 hours of sedentary behavior per day. Compared to those without sleep problems, those with sleep problems were significantly older and were more likely to be female, poorer, have lower education, be unemployed, and live in rural settings (**Table 1**). They were also significantly more likely to be obese, have a higher a number of chronic conditions, have depression, and engage in little physical activity.

Insert Table 1 about here

The prevalence of sleep problems increased with the longer time spent sedentary per day overall and across age groups (**Figure 1**).

Insert Figure 1 about here

The results of the multivariable logistic regression analysis on the association between time spent sedentary and sleep problems are shown in **Table 2**. In the model adjusted only for sociodemographic variables (Model 1), sedentary time of 4 to <8 hours/day, 8 to <11 hours/day, and ≥11 hours/day were associated with 1.09 (95%CI=0.86-1.37), 1.73 (95%CI=1.17-2.57), and 2.31 (95%CI=1.55-3.45) times higher odds for sleep problems compared to <4 hours/day. The significant OR for 8 to <11 hours/day and ≥11 hours/day were attenuated to 1.61 (95%CI=1.03-2.50) and 1.75 (95%CI=1.17-2.62) after further adjustment for obesity, number of chronic conditions, depression, and physical activity but still remained significant (Model 4). Greater time spent sedentary was also associated with higher odds for lethargy and poor sleep quality, while it was also associated with shorter and longer sleep duration (see **Appendix 1**). The country-wise analysis did not show evidence of between-country heterogeneity in the association between sedentary behavior of ≥8 hours/day and sleep problems (Higgin's I^2 0%) (**Appendix 2**).

Insert Table 2 about here

The age-stratified analyses are shown in **Table 3**. The strongest association was observed among those aged 50-64 years. For those aged ≥65 years, compared to <4 hours of sedentary time per day, 8 to <11 hours/day was significantly associated with higher odds for sleep problems (OR=1.70; 95%CI=1.21-2.40) but the OR for ≥11 hours/day did not reach statistical significance (OR=1.44; 95%CI=0.88-2.35). Finally, the OR for 8 to <11 and ≥11 hours/day of sedentary behavior were 1.56 and 1.38, respectively, for those aged 18-49 years but these estimates were not statistically significant possibly due to small sample size and limited statistical power.

Insert Table 3 about here

DISCUSSION (937/ 1000)

General findings

To the authors' knowledge, this is the first multi-national study examining the link between sedentary behavior and the presence of sleep problems. After adjustment for a wide range of sociodemographic factors, physical and mental health conditions and physical activity, those who were sedentary for 8 to <11 hours/day and ≥11 hours/day had 1.61 and 1.75 higher odds for having sleep problems compared with those being sedentary for less than four hours per day. More in detail, we found that greater time spent sedentary was associated with a poorer sleep quality and a shorter or longer sleep duration, while those who were ≥11 hours/day sedentary did also not feel rested and refreshed during the day.

The strongest association was observed among those aged 50-64 years. The reason why no significant association was found in those 65 years or older might be due to a degree of survival bias, with older individuals who were very sedentary (≥11 hours) more likely to have died at an earlier age; leading to an underestimation (dilution) of the true effect of high sedentary behavior on sleep problems.

We also found that depression, obesity, and physical diseases did not influence the relationship between time spent sedentary and sleep problems to a large extent. These findings may be rather surprising given that previous meta-analyses have shown that depression is associated with being more sedentary (Schuch et al., 2017), and that being more sedentary increases the risk for depression (Zhai et al., 2014), while sleep problems are core features of depression. Similarly, there is rigorous evidence in the general population demonstrating that sedentary behavior is associated with a range of deleterious physical health outcomes such as diabetes, cancer, and cardiovascular disease (Biswas et al., 2015), while sleep problems are common among individuals with a variety of chronic conditions (Koyanagi et al., 2014). This could mean that addressing mental and physical health problems may only have a rather minimal effect in improving sleep in people who are sedentary, and that the link between sedentary behavior and sleep problems may be better explained by other pathophysiological mechanisms. For example, it is known that being physically active instead of being sedentary is implicated in a range of physiological changes, including potential alterations of circadian rhythms (Aoyama and Shibata, 2017, Murray et al., 2017). Being active may acutely (i.e., within minutes) alter melatonin levels and result in a shift of the onset of nocturnal melatonin (Aoyama and Shibata, 2017). However, in our study, sedentary behavior was significantly associated with sleep problems regardless of physical activity. To the best of our knowledge research exploring the neurobiological effects of

sedentary behavior on circadian rhythms and sleep problems is still in its infancy. One potential mechanism might be the increased use of LED-backlit TV and computer screens. LED-backlit displays may cause significant suppression of melatonin, thus affecting the biological clock and possibly resulting in more sleep problems in screen-based sedentary behaviors (Bues et al., 2012).

Limitations and future research

The current findings should be interpreted in the light of several limitations. First of all, there are no standard epidemiological definitions for sleep problems nor insomnia (Roth, 2007). We used the extreme categories based on a single-item question that assessed three aspects of insomnia (i.e., problems falling asleep, waking up often during the night, and waking up too early in the morning) to determine the presence of sleep problems. The specificity of the definition is likely to have been enhanced by the use of extreme categories. However, we were unable to undertake more detailed analyses related to the chronicity of the sleep problems. Second, sedentary behavior was captured with a self-report measure, the accuracy of which has been questioned (Soundy et al., 2014). Future research could utilize objective measures of sedentary behavior such as accelerometers-inclinometers (Grant et al, 2006), although these objective measures are not able to investigate context specific sedentary behaviors (e.g. TV viewing, computer use, reading) which may provide important insights into the underlying relationships we observed (Buman et al., 2015). Therefore, a combination of objective measures and questionnaires assessing specific sedentary behaviors is recommended. Third, the study is cross-sectional, and consequently, the directionality of the relationships cannot be deduced with certainty. For example, it is also possible that sleep problems lead to sedentary behavior via associated fatigue. Although our data provides some potential hypotheses to address the relationship between low sedentary behavior and the presence of sleep problems, longitudinal studies are required to better disentangle the relationships we observed. Nonetheless, the strengths of the current study include the large sample size, the multi-national scope, and the use of predominantly nationally representative data. Most of the research in the domain of sedentary behavior and sleep problems has been conducted in Western countries, and little is known about these associations in regions across which there are multiple economic, cultural or social stress factors or differences in the health systems.

CONCLUSION

The current study demonstrates that sedentary behavior is associated with higher odds for having sleeping problems in LMICs, irrespective of the presence of mental and physical health problems, and physical activity levels. Considering the social and occupational costs of sleep problems, it is important that longitudinal research investigates the relationship with sedentary behavior and if directionality is confirmed, interventions should be developed to address this issue. To this end, given the wider benefits, policy makers and budget holders should invest in strategies that reduce sedentary behavior as part of a national public health strategy. Providing the financial resources for these awareness campaigns may prove cost-effective through reducing the economic burden associated with work absenteeism and lower productivity due to deficient sleep.

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CONFLICTS OF INTEREST

None.

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Table 1. Sample characteristics (overall and by sleep problems)

			Sleep problems		
Characteristic		Overall	No	Yes	P-value[a]
Age (years)	18-49	72.7	74.0	46.5	<0.0001
	50-64	17.0	16.6	25.2	
	≥65	10.3	9.4	28.3	
Gender	Male	49.9	50.5	37.7	<0.0001
	Female	50.1	49.5	62.3	
Wealth (quintiles)	Poorest	14.9	14.4	26.0	<0.0001
	Poorer	17.8	17.5	23.8	
	Middle	18.8	18.9	18.4	
	Richer	21.1	21.4	15.7	
	Richest	27.3	27.8	16.0	
Education	<Secondary	43.1	41.9	65.6	<0.0001
	≥Secondary	56.9	58.1	34.4	
Unemployed	No	61.5	62.8	33.7	<0.0001
	Yes	38.5	37.2	66.3	
Setting	Rural	55.6	55.3	63.3	0.0096
	Urban	44.4	44.7	36.7	
Obesity	No	93.0	93.2	89.9	0.0087
	Yes	7.0	6.8	10.1	
No. of chronic conditions	Mean (SD)	0.77 (0.99)	0.72 (0.92)	1.77 (1.75)	<0.0001
Depression	No	95.9	96.8	77.8	<0.0001
	Yes	4.1	3.2	22.2	
Physical activity	High	58.2	58.6	49.0	<0.0001
	Moderate	20.3	20.3	19.3	
	Low	21.6	21.1	31.7	

Abbreviation: SD Standard deviation
Data are based on weighted sample.
Data are % unless otherwise stated.
[a] P-value was calculated by Chi-squared tests for categorical variables and by Student's *t*-tests for continuous variables.

Table 2. Association between time spent sedentary and sleep problems estimated by multivariable logistic regression

		Model 1		Model 2		Model 3		Model 4	
Characteristic		OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
Time spent sedentary	4 to <8 vs. <4	1.09	[0.86,1.37]	1.08	[0.85,1.37]	1.03	[0.81,1.31]	1.02	[0.80,1.30]
(hours/day)	8 to <11 vs. <4	1.73**	[1.17,2.57]	1.72*	[1.12,2.64]	1.64*	[1.04,2.58]	1.61*	[1.03,2.50]
	≥11 vs. <4	2.31***	[1.55,3.45]	1.96**	[1.30,2.95]	1.83**	[1.23,2.72]	1.75**	[1.17,2.62]
Age (years)	Per one-unit increase	1.04***	[1.03,1.05]	1.03***	[1.02,1.03]	1.03***	[1.02,1.04]	1.03***	[1.02,1.03]
Gender	Female vs. male	1.37*	[1.03,1.82]	1.36	[0.98,1.87]	1.34	[0.98,1.83]	1.34	[0.98,1.84]
Wealth (quintiles)	Poorer vs. poorest	0.83	[0.60,1.14]	0.88	[0.64,1.21]	0.89	[0.64,1.23]	0.89	[0.64,1.23]
	Middle vs. poorest	0.67**	[0.50,0.89]	0.66**	[0.49,0.89]	0.64**	[0.48,0.86]	0.64**	[0.48,0.87]
	Richer vs. poorest	0.57**	[0.40,0.81]	0.58**	[0.40,0.82]	0.61**	[0.43,0.88]	0.61**	[0.42,0.87]
	Richest vs. poorest	0.50**	[0.33,0.76]	0.54**	[0.36,0.82]	0.58*	[0.38,0.88]	0.58**	[0.38,0.87]
Education	≥ vs. <Secondary	0.83	[0.58,1.20]	0.84	[0.57,1.23]	0.85	[0.58,1.24]	0.85	[0.58,1.24]
Unemployment	Yes vs. no	1.90***	[1.40,2.56]	1.73***	[1.26,2.37]	1.78***	[1.31,2.43]	1.74***	[1.27,2.37]
Setting	Urban vs. rural	0.88	[0.67,1.16]	0.89	[0.67,1.17]	0.84	[0.64,1.11]	0.83	[0.64,1.10]
Obesity	Yes vs. No			0.84	[0.56,1.26]	0.80	[0.57,1.14]	0.80	[0.57,1.13]
No. of physical diseases	Per one-unit increase			1.72***	[1.60,1.85]	1.64***	[1.51,1.77]	1.64***	[1.51,1.77]
Depression	Yes vs. no					3.41***	[2.28,5.11]	3.41***	[2.28,5.09]
Physical activity	Moderate vs. high							1.05	[0.80,1.39]
	Low vs. high							1.22	[0.92,1.64]

Abbreviation: OR Odds ratio; CI Confidence interval
Models are adjusted for all variables in the respective column and country.
* p<0.05, ** p<0.01, *** p<0.001

Table 3. Association between time spent sedentary and sleep problems by age groups estimated by multivariable logistic regression

		Age 18-49 years (N=8340)		Age 50-64 years (N=19,544)		Age ≥65 years (N=14,585)	
Characteristic		OR	95%CI	OR	95%CI	OR	95%CI
Time spent sedentary	4 to <8 vs. <4	0.94	[0.61,1.44]	1.30*	[1.00,1.69]	1.06	[0.83,1.35]
(hours/day)	8 to <11 vs. <4	1.56	[0.53,4.65]	2.05***	[1.36,3.10]	1.70**	[1.21,2.40]
	≥11 vs. <4	1.38	[0.43,4.42]	3.80***	[2.11,6.83]	1.44	[0.88,2.35]
Age (years)	Per one-unit increase	1.08***	[1.05,1.10]	1.02	[0.99,1.05]	1.02	[1.00,1.04]
Gender	Female vs. male	1.03	[0.57,1.86]	1.77***	[1.33,2.35]	1.60***	[1.22,2.09]
Wealth (quintiles)	Poorer vs. poorest	0.94	[0.56,1.59]	0.71	[0.46,1.10]	0.84	[0.59,1.19]
	Middle vs. poorest	0.42**	[0.24,0.72]	0.73	[0.47,1.12]	0.96	[0.69,1.34]
	Richer vs. poorest	0.53	[0.28,1.03]	0.51**	[0.33,0.78]	0.85	[0.58,1.24]
	Richest vs. poorest	0.46	[0.20,1.05]	0.72	[0.45,1.17]	0.53***	[0.37,0.74]
Education	≥ vs. <Secondary	0.97	[0.49,1.92]	0.61**	[0.44,0.85]	0.71*	[0.51,0.99]
Unemployment	Yes vs. no	2.39**	[1.40,4.07]	1.45**	[1.12,1.87]	2.10***	[1.45,3.06]
Setting	Urban vs. rural	0.89	[0.52,1.54]	0.78	[0.58,1.06]	0.82	[0.62,1.08]
Obesity	Yes vs. No	0.57	[0.25,1.32]	0.78	[0.55,1.12]	1.12	[0.78,1.61]
No. of physical diseases	Per one-unit increase	1.80***	[1.52,2.13]	1.65***	[1.49,1.82]	1.45***	[1.34,1.57]
Depression	Yes vs. no	4.10***	[2.14,7.84]	2.07***	[1.46,2.95]	2.84***	[2.00,4.03]
Physical activity	Moderate vs. high	1.14	[0.64,2.03]	1.08	[0.80,1.46]	0.90	[0.68,1.17]
	Low vs. high	1.62	[0.96,2.75]	1.04	[0.77,1.41]	1.09	[0.82,1.44]

Abbreviation: OR Odds ratio; CI Confidence interval
Models are adjusted for all variables in the Table and country.
* p<0.05, ** p<0.01, *** p<0.001